HEALTH VALUE AND SELF-ESTEEM AS PREDICTORS OF WELLNESS BEHAVIORS

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REPORT NO. 89-27

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NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND
BETHESDA, MARYLAND

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Report No. 89-27, supported by the Naval Military Personnel Command (Work Order No. N0002288WRWWW508) and by the Naval Medical Research and Development Command (Work Unit 63706N.M0095.005), Department of the Navy. The views presented are those of the authors and do not reflect the official policy or position of the Department of the Navy, Department of Defense, nor the U.S. Government. Dr. Abood was a participant in the ASEE Summer Faculty Research Program and is an Associate Professor at The Florida State University, Tallahassee, Florida.

SUMMARY

Problem

Understanding and predicting positive health behaviors are a major concern to health promotion professionals. Consequently, research efforts have been aimed at examining the factors which underlie the practice of wellness behaviors. While health value and self-esteem are two variables which have been considered important in the understanding of health behavior, little has been done to specifically study how these factors relate independently to health behavior. Understanding the true effects of these factors on health behavior could benefit health promotion efforts designed to improve health practices.

Objective

The purpose of this study was to examine the relationship between self-esteem, health values, specific health behaviors and the general practice of wellness behaviors.

Approach

"Life-style" surveys were collected from 3,045 Navy personnel. These surveys addressed a variety of health and fitness-related behaviors, health value, and self-esteem. Multiple regression analyses were computed to determine the unique contribution of health value and self-esteem to predicting several specific health behaviors as well as the general practice of a variety of wellness behaviors.

Results

The value that one placed on health was the best predictor of specific health behaviors as well as the general practice of wellness behaviors. Self-esteem did not predict specific health behaviors, but did predict the general practice of wellness behaviors after controlling for the value placed on health.

Conclusions

These findings indicate that health value is an independent predictor of several specific health behaviors as well as the general practice of a variety of wellness behaviors. Findings suggest that self-esteem is not the driving force behind the practice of specific health behaviors. However, self-esteem may have a reciprocal relationship with the general practice of wellness behaviors. That is, high self-esteem might increase the general tendency for a person to engage in a wide variety of health-enhancing behaviors. Conversely, engaging in a variety of positive health behaviors may enhance one's perceptions of self-worth.

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Introduction

Understanding and predicting positive health behaviors are a major concern to health promotion professionals. Consequently, research efforts have been aimed at examining the factors which underlie the practice of wellness behaviors. It has been found, for example, that placing a high value on health predisposes one to engage in positive health behaviors (Kristiansen, 1985; Kaplan & Cowles, 1978; Abella & Heslin, 1984; Bruhn & Parcel, 1982; Wurtele, Britcher & Saslawsky, 1985). Thus, according to a fairly sizeable body of literature, the value one places on health appears to be one factor that has a stable association with health behaviors.

Another factor which has been suggested as important in the understanding of health behavior is self-esteem. Although a number of studies document the importance of self-esteem in the determination of health status, few specifically focus on the relation to health practices (McKinlay, 1972). Of the three studies found which addressed self-esteem and health practices, only two reported a positive relationship. Herold, Goodwin & Lero (1979) found that women with higher self-esteem had more positive attitudes about birth control and were more likely to obtain and use contraception effectively. Hallal (1982) found that women who practiced breast self-examination (BSE) had higher self-concept levels than those who did not practice BSE. Andreoli (1981), however, found no significant difference in self-concept between hypertensive males who complied with prescribed therapy and those who did not. Therefore, available research provides some support for the relationship between self-esteem and health behavior although to a lesser extent than that reported for health value.

Although self-esteem and health values have both been considered important predisposing factors (Green, et al., 1980), little has been done to study how these factors relate independently to health behavior. A search of the related literature revealed only one study which examined the effects of both self-concept and personal values (including health) on health behavior. Petersen-Martin & Cottrell (1987) found that 8.4% of the variance of an index of health behavior was explained by self-concept. No significant differences were found, however, between those individuals with good self-concepts and

those with poor self-concepts for any of the specific behaviors making up the health behavior index. Another finding of this study was that persons who place a high value on health practice more positive health behaviors than persons who place a low value on health. This study did not determine, however, whether self-concept has an effect on health behavior after controlling for the value that one places on health. Thus, it is difficult to determine from this study if self-concept has an effect on health behavior independent of value placed on health. The purpose of this paper was to examine the relationship between self-esteem, health values, specific health behaviors, and the general practice of wellness behaviors. Specifically, we sought to examine the independent effect of self-esteem on health behavior after controlling for health value.

Methods

Subjects

Demographic data were collected to characterize the 3,045 subjects who took part in the study. All were members of the U.S. Navy. Males accounted for 89 percent of the respondents and females 11 percent. Ages ranged from 17 to 44 with a mean of 28.2 years. Average years of school completed was 12.9 with a range from 8-22 years. Enlisted personnel comprised 88.4 percent and officers 11.6 of the sample. Of the 2750 individuals who identified their race/ethnic group, there were 80 percent Caucasians, 11 percent Black, 4 percent Hispanic/Puerto Rican, 3 percent Malayan/Filipino, and 2% were of other race/ethnic groups.

Procedures

Participants were randomly selected from Navy personnel on active duty during 1985. Selecting the sample was a two-step process. First, 119 command units were randomly selected from approximately 5000 existing in the Navy. Second, individuals were randomly selected from each of the 119 command units. To select individuals within the command units, March 1985 computerized personnel tapes from the Naval Military Personnel Command were used. Depending on the size of the command unit, from 10 to 60 individuals were selected for participation from each unit.

Measures

The questionnaire included a broad range of items which addressed a variety of health and fitness-related behaviors, values and perceptions. Some

items were used individually and others were combined into scales.

a. Health Behavior Measures:

Wellness Behavior Inventory. There is little consensus concerning the behaviors that should be included within the construct of wellness behaviors. As Steel and McBroom (1972) note, "the range and typology of wellness behaviors is limited only by the imagination of researchers and the purposes of research" (p.383). Thus, a number of health behaviors were compiled in an attempt to assimilate a representative sample of wellness behaviors that an average person might engage in (Vickers & Hervig, 1984). Examples of items included in the inventory are: "I eat a balanced diet", "I get enough sleep", "I choose spare time activities to help me relax", "I do things that will improve my health", "I don't take chemical substances which might injure my health', "I discuss my health with friends, neighbors and relatives", "I gather information on things that affect my health."

In the present study, 37 items were combined into a single scale to indicate one's general tendency to engage in positive health behaviors. Items were answered on a 5-point response scale from 1=not at all like me to 5=very much like me. The average response for the 37 items was computed for each participant. This scale produced an alpha of .88.

Tobacco Consumption. The average amount of tobacco smoked per day was indicated on a 10-category response scale: 0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, and 41+ cigarettes, cigars, and/or pipefuls of tobacco.

Alcohol Consumption. The average amount of alcohol consumed per week was derived by multiplying the responses to two separate questions: a) During the last seven days what was the average number of drinks consumed per day; and, b) On how many days during the past week did you consume any alcohol?

Exercise. An estimate of total kilocalories expended per week in physical exercise was computed for each person. Measures included both frequency (times per week) and duration (minutes per exercise session) for each of nine exercises (running, continuous walking, swimming, bicycling, racket sports, aerobic dance/exercise class, weight lifting, calisthenics, and basketball). Kilocalories expended per minute were assigned for each activity using the tables of energy expenditure in McArdle, Katch, and Katch (1986). The number of kilocalories required for each exercise was multiplied by the total time in minutes per week that the respondent reported engaging in that activity (frequency x duration), then summed across all activities for a

weekly estimate of exercise-related energy expenditure.

Weight Control. (% Deviation from Ideal Weight). To determine an indicator of each person's ability to control his or her weight, the difference between the subject's weight and ideal weight (Metropolitan Life Foundation, 1983) was calculated for a person of medium frame and a given height. Percent deviation from ideal weight was then defined as: [(Weight - Ideal Weight) / Ideal Weight] x 100.

b. **Psychological Variables:**

Health Value. Subjects were asked to respond to items reflecting health value and self-esteem. Two items measuring health value were answered on a 5-point response scale from 1=not at all important to 5=very important; item responses were averaged to produce a scale score (alpha = .86).

Self-Esteem. Items measuring self-esteem (Rosenberg, 1965) were answered on a 7-point response scale from 1=disagree strongly to 7=strongly agree. Some items were reversed scored so that a high value on each item indicated high self-esteem. The responses to the 10 items were averaged to form the self-esteem scale (alpha = .81).

Results

Descriptive statistics for the variables included in this study can be seen in Table 1. The mean response for the Wellness Behavior Inventory was 3.4 indicating that this group sometimes engaged in wellness behaviors and other times did not.

The most commonly reported exercise activities included walking, running, calisthenics, weight-lifting, swimming, and bicycling, in that order. The average exercise-related caloric expenditure was 2070.83 kilocalories per week. The amount of exercise reported by the U.S. Navy personnel in this survey was considerably higher than that reported by the general population in the 1985 National Health Interview Survey (Schoenborn, 1986). It is also interesting to note that respondent's were, on the average, only 8.8% above their ideal weight, with about 18% being 20% or more above their ideal weight. In contrast, about 24% of Americans are 20% or more above their ideal weight (Schoenborn, 1988).

Table 1. Means and standard deviations for health values, self-esteem, and health behaviors

	MEANS	STANDARD DEVIATIONS
Health Behaviors		
Wellness Behavior Inventory	3.40	.52
Exercise Caloric Expenditure	2070.83	1781.82
Weight Control (% Deviation from Ideal Weight)	8.84	14.44
Alcohol Consumption	7.13	12.00
Average Amount of Tobacco Consumed	8.54	12.13
Health Value	4.30	.73
Self Esteem	5.95	.83

The average amount of alcohol consumed per week was 7.1 drinks. While these data do not provide information on the types of alcoholic drinks or the precise amount of alcohol consumed per drink, an average of 7.1 drinks per week represents moderate consumption of alcohol.

The average amount of tobacco smoked in the last seven days was 8.5 cigarettes, cigars, or pipefuls of tobacco per day. This average was based on the entire sample, i.e., smokers and non-smokers with non-smokers coded as 0-amount of tobacco per day. Considering smokers only, the average amount of tobacco smoked per day was 19.6 cigarettes, cigars, or pipefuls of tobacco.

With respect to the psychological variables, it can be seen from Table 1 that respondents considered good health very important and valued their health very highly. Additionally, mean self-esteem scores reflected a generally high level of self acceptance.

Table 2 presents the zero-order correlations between health value, self-esteem, and the health behavior measures. Health value and self-esteem were correlated modestly (r= .24), and both were more strongly correlated with the general practice of wellness behaviors than with any of the specific health behaviors. Health value was also more strongly associated with each of the health behaviors than was self-esteem.

Table 2. Zero-order correlations between health value, self-esteem, and health behaviors.

		1	2	3	4	5	6	7
1	**Health Values**	1.00						
2	**Self-Esteem**	.24	1.00					
3	**Wellness Behavior Inventory**	.44	.30	1.00				
4	**Exercise Caloric Expenditure**	.26	.10	.30	1.00			
5	**Alcohol Consumption**	-.11	.03	-.22	-.01	1.00		
6	**Tobacco Consumption**	-.25	.01	-.24	-.21	.19	1.00	
7	**Weight Control** (% Deviation from Ideal Weight	-.06	.03	-.04	.04	.01	-.04	1.00

Multiple regression analyses were computed to determine the unique contribution of health value and self-esteem to specific health behaviors and to the general practice of many wellness behaviors. A step-wise procedure was used with the condition that both variables entered into the final equation. As seen in Table 3, the value that one places on health was the best predictor of specific health behavior as well as the general practice of wellness behaviors. Specifically, as health value increased so did the likelihood that one would engage in positive health behaviors. When controlling for health value, self esteem predicted only the general practice of many different wellness behaviors.

Table 3. Predictors of specific health behaviors and the general practice of wellness behaviors.

Criterion	Predictors	B	R	R-Sq.Ch.
Wellness Behavior Inventory	Health Value	.28	.44	.20*
	Self-Esteem	.13	.49	.04*
	Constant	1.41		
Exercise Caloric Expenditure	Health Value	620.85	.26	.07*
	Self-Esteem	81.60	.26	.00
	Constant	-1079.10		
Weight Control (% Deviation from Ideal Weight)	Health Value	-1.40	.06	.00
	Self-Esteem	.05	.07	.00
	Constant	10.00		
Alcohol Consumption	Health Value	-1.81	.11	.01*
	Self-Esteem	- .06	.11	.00
	Constant	15.23		
Tobacco Consumption	Health Value	-4.50	.25	.06*
	Self-Esteem	1.05	.26	.00
	Constant	21.50		

* Due to the large sample size, a variable had to explain at least 1% of the variance to be considered significant.

Discussion

These findings support the results of previous research efforts which report that health value is an important predictor of both specific health behaviors as well as the general practice of many different wellness behaviors (Kristiansen, 1985; Kaplan & Cowles, 1978; Abella & Heslin, 1984; Bruhn & Parcel; Wurtele, Britcher & Saslawsky, 1985). Self-esteem did not predict specific health behaviors when controlling for health values which is in contrast to the studies of self-esteem and health behaviors reported by Hallal (1982) and Herold, Goodwin and Lero (1979). One possible explanation for this finding relates to the relatively restricted range of both self-esteem scores and specific health behaviors reported. It may be recalled that, on the average, this sample reported a very high level of self-esteem, and, with the exception of tobacco consumption, reported engaging in other specific health behaviors which can be described as neither extremely health enhancing nor extremely health detracting. Thus, a sample of individuals with a wider range of both self-esteem and health behaviors may be necessary to produce significant associations between self-esteem and specific health behaviors.

Another possible explanation of these findings may be that one's self-esteem simply does not influence the practice of the specific health behaviors examined here. That is, a primary reason that one might smoke cigarettes for example, may be more related to environmental influences than to low self-esteem. Moreover, the findings that these respondents' percent deviation from ideal weight was only 8.8% as compared to the 20% deviation found in the general population, and that exercise activity levels were higher than the general population may be more a function of the need to adhere to Naval weight restrictions and fitness standards than a function of self-esteem.

It is interesting to note that while self-esteem did not predict the specific health behaviors examined in this study, self-esteem did predict the general practice of many different wellness behaviors even after controlling for the value placed on health. While this study does not provide information regarding the direction of causality, it seems likely that self-esteem may have a reciprocal relationship with the general practice of wellness behaviors. That is, high self-esteem might increase the general tendency for a person to engage in a wide variety of health-enhancing behaviors. Conversely, engaging in a wide variety of health behaviors may enhance one's

perceptions of self-worth as well. The findings from this study suggest that this reciprocal relationship might be evident only at more global levels (i.e., the general practice of a variety of health behaviors) rather than at the level of selected individual behaviors.

These findings support the notion that increasing the value that one places on health might lead to engaging in more positive health practices. As self-esteem was related to the general practice of many different wellness behaviors, it might be useful to develop ways to facilitate an individual's experimentation with a variety of health enhancing behaviors. Simply trying certain health practices may lead to feeling better physically as well as producing enhanced self-esteem which could lead to increased experimentation and subsequent adoption of other wellness behaviors. Health promotion professionals can assist with the experimentation of new health behaviors by helping individuals make realistic choices, acquainting them with what they can expect as a result of engaging in these new behaviors, and finally, assisting them in the process of weighing the advantages and disadvantages of adopting the new behavior. Lastly, it is likely that many other psychological factors predict positive health behaviors. It is recommended, therefore, that health professionals persist in their exploration of psychological differences in those individuals who engage in specific health behaviors as well as the general practice of wellness behaviors.

REFERENCES

Abella, R., & Heslin, R. (1984). Health locus of control, value, and the behavior of family and friends: An integrated approach to understanding preventive health behavior. Basic and Applied Social Psychology, 5:283-293.

Andreoli, K. G. (1981). Self-concept and health beliefs in compliant and noncompliant hypertensive patients. Nursing Research, 30:323-328.

Bruhn, J.G., & Parcel, G.S. (1982). Preschool health education program (PHEP): An analysis of baseline data. Health Education Monographs, 9: 116-119.

Green, L.W. (1970). Should health education abandon attitude change strategies? Perspectives from recent research. Health Education Monographs, 30:25-47.

Hallal, J.C. (1982). The relationship of health beliefs, health locus of control, and self-concept to the practice of breast self-examination in adult women. Nursing Research, 31:137-142.

Herrold, E.S., Goodwin, M.S. & Lero, D.S. (1979). Self-esteem, locus of control, and adolescent contraception. Journal of Psychology, 101: 83-88.

Kaplan, G.D., & Cowles, A. (1978). Health locus of control and health value in the prediction of smoking reduction. Health Education Monographs, 6: 129-137.

Kristiansen, C.M. (1985). Value correlates of preventive health behavior. Journal of Personality and Social Psychology, 49:748-758.

McArdle, W.D., Katch, F.I., & Katch, V.L. (1986). Exercise physiology: Energy, nutrition and human performance (2nd ed.). Philadelphia: Lea and Febriger.

McKinlay, J.B. (1972). Some approaches and problems in the study of the use of services-An overview. Journal of Health and Social Behavior, 13:115-152.

Metropolitan Life Insurance Foundation (1983). Height and Weight tables. Statistical Bulletin, 64:4.

Petersen-Martin, J. & Cottrell, R.R. (1987). Self-concept, values, and health behavior. Health Education, October/November, 6-9.

Rosenberg, M. (1965). Society and the adolescent self-image. New Jersey: Princeton University Press.

Schoenborn, C.A. (1986). Health habits of U.S. adults: "Alameda 7" revisited. Public Health Reports, 101:571-580.

Schoenborn, C.A. (1988). Health promotion and disease prevention: United States, 1985. Vital and Health Statistics. Series 10, No. 163. DHHS Pub. No. (PHS) 88-1591. Public Health Service. Washington: U.S. Government Printing Office.

Steel, J.L., & McBroom, W.H. (1972). Conceptual and empirical dimensions of health behavior. Journal of Health and Social Behavior, 13:382-392.

Vickers, R.R., Jr., & Hervig, L.K. (1984). Health behaviors: Empirical consistency and theoretical significance of sub-domains. Report No. 84-18. San Diego, CA: Naval Health Research Center.

Wurtele, S.K., Britcher, J.C., & Saslawsky, D.A. (1985). Relationships between locus of control, health value, and preventive health behaviors among women. Journal of Research in Personality, 19(3):271-278.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION: Unclassified	1b RESTRICTIVE MARKINGS: N/A
2a SECURITY CLASSIFICATION AUTHORITY: N/A	3. DISTRIBUTION/AVAILABILITY OF REPORT: Approved for public release; distribution unlimited.
2b DECLASSIFICATION/DOWNGRADING SCHEDULE: N/A	
4. PERFORMING ORGANIZATION REPORT NUMBER(S): NHRC Report No. 89-07	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION: Naval Health Research Center; 6b. OFFICE SYMBOL (If applicable): 40	7a NAME OF MONITORING ORGANIZATION: Commander, Naval Medical Command
6c. ADDRESS (City, State, and ZIP Code): P.O. Box 85122, San Diego, CA 92138-9174	7b. ADDRESS (City, State, and ZIP Code): Department of the Navy, Washington, DC 20372
8a. NAME OF FUNDING/SPONSORING ORGANIZATION: Naval Medical Research & Development Command; 8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER: Naval Military Personnel Command Reimbursable Doc #N0002288WRWW508, Appro. 1781804
8c. ADDRESS (City, State, and ZIP Code): NMC NCR, Bethesda, MD 20814-5044	10. SOURCE OF FUNDING NUMBERS: PROGRAM ELEMENT NO. 63706N; PROJECT NO M000 95; TASK NO 005; WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)

(U) HEALTH VALUE AND SELF-ESTEEM AS PREDICTORS OF WELLNESS BEHAVIORS

12 PERSONAL AUTHOR(S)

Abood, Doris A., Conway, Terry L.

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Interim	FROM _____ TO _____	1988, Aug, 25	

16. SUPPLEMENTARY NOTATION

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Health Value; Navy Men and Women; Self-Esteem; Health Behaviors; Wellness Behaviors (JG)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Understanding and predicting positive health behaviors are a major concern to health promotion professionals. Consequently, research efforts have been aimed at examining the factors which underlie the practice of wellness behaviors. Although health value and self-esteem are two variables which have been considered important in the understanding of health behavior, little has been done to study how these factors relate independently to health behavior. "Lifestyle" surveys were collected from 3,045 Navy personnel. These surveys addressed a variety of health and fitness-related behaviors, health value, and self-esteem. The value that one placed on health was the best predictor of specific health behaviors as well as the general practice of wellness behaviors. Self-esteem did not predict specific health behaviors, but did predict the general practice of wellness behaviors after controlling for the value placed on health. These findings indicate that health value is an independent predictor of specific health behaviors as well as the general practice of many different wellness behaviors. However, self-esteem may not be the driving force behind the

20 DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
☐ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	
22a NAME OF RESPONSIBLE INDIVIDUAL: Terry L. Conway	22b TELEPHONE (Include Area Code): (619) 553-8465; 22c. OFFICE SYMBOL: 40

DD FORM 1473, 84 MAR — 83 APR edition may be used until exhausted. All other editions are obsolete.

Unclassified

U.S. Government Printing Office: 1985-607-067

19. ABSTRACT (continued):

practice of specific health behaviors. Instead, self-esteem may have a reciprocal relationship with the general practice of wellness behaviors. That is, high self-esteem might increase the general tendency for a person to engage in a wide variety of health-enhancing behaviors. Conversely, engaging in a variety of positive health behaviors may enhance one's perceptions of self-worth.